Improving safety on the labour ward - training the team

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- 6,500 deliveries
- 26% C/S rate
- 3% home births
- Stand alone & integrated birth centres
Prompt Maternity Foundation
Disclaimer

• Founder member
• Board member
• Prompt trainer in the UK and internationally
• No financial interest

www.promptmaternity.org
Introduction

• SaFE Study

• Southmead labour ward training

• 10 steps to implementing & sustaining training

• Elements of effective training

• What next?
Recommendations

• Simulated emergencies should be organised to improve management of rare obstetric emergencies
  
  CEMD – Why Mothers Die 1998
  CEMACH – Saving Mothers Lives 2007
  Kings Fund: Safer Births everybody’s business. 2008
  NHSLA. CNST Maternity Standards 2009
  CMACE. Saving Mothers Lives. 2010

• All units should maintain or initiate on-going multi-disciplinary team training for their maternity staff
  
  MBRRACE UK – Saving Lives, Improving Mothers’ Care. 2014
Evidence based training

• Not all training is equal or effective
  Siassakos D et al BJOG 2010

• Minimal guidance or evidence to suggest the best methods for training
  Black RS, Brocklehurst P BJOG 2003
**SaFE study**

**Simulation and Fire drill Evaluation**

- Study of the effect of individual and team drills on ability of labour ward staff to manage obstetric emergencies.
- 6 hospitals, 141 staff (96 midwives, 45 doctors)
- Local vs. simulation centre-based training
- Evaluated teamwork training
SaFE results: skills

• Shoulder Dystocia
  – Increase in delivery rate 43.9% / 83.3% (p< 0.001)
  – Reduction in total force 2,030N / 2,916N (p = 0.009)

• Eclampsia
  – Reduction in time to start Magnesium (p = 0.01)
  – Reduction in errors (p< 0.001)
SaFE results: knowledge

• Significant increase in knowledge following training

• 93% increased MCQ score

• Knowledge at 6 & 12 months was significantly higher than pre-training

SaFE study conclusions

• Training definitely required

• Training improves knowledge and performance

• Teamworking scores improve after working in teams

• Similar improvements locally and in simulation centres

• Improvements in knowledge and skills maintained for at least 1 year
Southmead labour ward training

- Bi-monthly training started in June 2000
- 50-60 participants per day
- Annual attendance mandatory
- Multiprofessional in-house training
- High fidelity, low tech simulation
- Teamwork and clinical training integrated
- No assessment
North Bristol NHS Trust
Directorate of Women and Children’s Health

Intrapartum Update – Chapter 9

Dates for 2009/2010:

Thursday 2\textsuperscript{nd} April
Wednesday 17\textsuperscript{th} June
Wednesday 15\textsuperscript{th} July
Friday 18\textsuperscript{th} September
Wednesday 4\textsuperscript{th} November
Tuesday 15\textsuperscript{th} December
Friday 22\textsuperscript{nd} January (2010)

Please book your place with
Bernice or Mel on CDS ext. 5306
Intrapartum Update (PROMPT Course) – Chapter 13

Pre-reading booklet

Monday 9th December, 2013
Learning and Research Building, Southmead Hospital
Southmead – morning workshops

• Course Manual and local pre-reading book

• Workshops:
  – National Guidelines & recommendations
  – Changes to departmental policy
  – Departmental priorities - risk management issues
  – Research
  – Documentation

• Fetal monitoring and CTG case discussions and quiz
Documentation stickers and proforms – April 2014
Maternity Department - North Bristol Trust

Intermittent Auscultation Sticker

If the woman is healthy and has an otherwise uncomplicated pregnancy, offer and recommend Intermittent auscultation (IA) using either a Finaad stethoscope, or a hand-held Doppler ultrasound device in labour to monitor fetal wellbeing (NICE 2007).

An admission CTG in low risk pregnancy is not recommended in any birth setting (NICE 2007). It is recommended that the intermittent auscultation sticker is used at the beginning of commencing IA in labour.

Documentation for CTG reviews:
An overall opinion of the CTG must be documented on the proforma and also on the CTG itself. The green (normal), amber (suspicious) and red (pathological) stickers (see below) should be stuck on the CTG at the point where reviewed. The sticker should also be signed by the reviewer.

Intrapartum CTG proforma – with Fresh Eyes

All intrapartum CTGs should be described using the grey NBT Intrapartum CTG proforma at least hourly, at every review and when there is any change in the pattern.

“Fresh Eyes”
It is recommended that a midwife asks another midwife or doctor to assess the CTG ideally every 2 hours to ensure that there is a “fresh eyes” assessment, regardless of whether the CTG is normal, suspicious or pathological. The “fresh eyes” reviewer should document on the CTG proforma in the space provided if they agree with the opinion of the person who has completed the CTG proforma. If their opinion is different to the midwife caring for the woman, then the reviewer should complete another CTG proforma and seek a further senior obstetric/midwifery opinion.

Postnatal Bladder Care
The first postnatal void should occur within 4-6 hours of birth. Record void volume on the Post-birth bladder care sticker in the maternity hand held notes.

If first postnatal void by 6 hours is less than 250 ml then an indwelling catheter or a ‘bladder scan’ should occur. These women are at high risk of retention.

- If residual volume is less than 200ml, assess next 2 voids for volume and timing.
- If residual is over 200ml, insert an indwelling catheter for 48 hours and send MSU. Complete a post birth bladder care sticker in the maternity hand held notes.

Women having an instrumental birth in theatre:
Insert indwelling catheter during birth and complete a post birth bladder care sticker in the maternity hand held notes. Maintain a fluid balance chart for 24 h.

Catheter to be kept in situ for at least 12 hours. Remove within daylight hours for maximum monitoring of voids. Following catheter removal, first void should occur within 4-6 hours and volume measured as per normal birth and recorded on the post birth bladder care sticker.

Intrapartum Bladder Care
Women should pass urine at least 4 hourly in labour. Palpate the bladder following micturition to exclude retention.

The volume of urine passed should be documented on the VE sticker.

See NBT Bladder Care Guideline (Sharepoint)
Southmead – afternoon drills

- Participants divided into six multi-professional teams
- Emergency Drills (all include teamworking):
  - Shoulder Dystocia
  - Major obstetric haemorrhage
  - Eclampsia/severe hypertension
  - Breech/Twins/Cord prolapse
  - Neonatal resuscitation
  - Maternal collapse/Adult resuscitation/recovery from GA
Aims of the advanced life support scenario

In this scenario a woman runs into the assessment unit to tell staff that her pregnant sister has collapsed in the waiting room and she thinks she has stopped breathing. The scenario enables staff and students to practise basic and advanced life support for a pregnant patient.

This scenario is a maternal cardiac arrest in a hospital waiting room with a massive pulmonary embolism. However, you may wish to use a scenario where there is an amniotic fluid embolism, anaphylaxis or haemorrhagic shock. An additional scenario that covers advanced life support is presented in the anaesthetic emergencies chapter (Section 7) and relates to the management of local anaesthetic toxicity.

The supporting materials included on the CD-ROM are:

- treatment algorithms for basic and advanced life support
- blank maternity notes
- examples of ECG strips: sinus rhythm, ventricular tachycardia, ventricular fibrillation, asystole
- pictures of a perimortem caesarean section set and automatic external defibrillator (AED).

These are all in a printable format and for use in the scenario.

Advanced life support scenario

The aims of the scenario are to recognise cardiac arrest, call for appropriate help (including the maternal cardiac arrest team), immediately commence basic life support and to commence ALS as soon as possible.

Drill facilitator 1 (handing over to the midwife):

‘Helen is in the day room waiting to be seen. She is 33+4 weeks of gestation in her second pregnancy. She has previously had an instrumental birth at term. Helen was asked to attend the maternity assessment unit by her community midwife because she has been short of breath for the last 3 days. She doesn’t look too bad to me and keeps asking if she can go out for a cigarette, so she can’t be feeling too breathless. I was just going to discharge the lady from bed two, and I would be grateful if you could then see Helen for me.’

Drill facilitator 2 (Helen’s sister):

‘Help, help! My sister looks really unwell, she has collapsed on the floor and I don’t think she is breathing. Come quickly, please help her.’

Scenario outline

The first handover is given to two members of staff in the assessment unit by one drill facilitator (playing the handing-over midwife). At the end of this handover, a second drill facilitator (playing Helen’s sister) runs into the room announcing that her sister has collapsed in the day room. On arrival, Helen is lying on the floor of the day room and has no signs of life.

The team is expected to immediately call for additional help using an emergency bell, check for signs of life by ‘shaking and shouting’ and open the airway to ‘look, listen and feel’ for breathing for up to 10 seconds. In this scenario there are no signs of life.

At this point one team member should go to get help, make sure the arrest trolley containing the defibrillator is on its way, and ensure that a 2222 emergency call has been made to switchboard announcing ‘maternal cardiac arrest’. While help is being summoned, the second team member should immediately commence 30 chest compressions followed by two ventilation breaths.

When help arrives, they should displace the uterus from compressing the inferior vena cava by placing the patient in the left lateral tilt (using a wedge, their knees or a pillow) or by manually displacing the uterus.

The additional staff should help with ventilation. If an anaesthetist has not yet arrived, the team should use a Guedel airway and a ‘bag and mask’ to provide ventilations at a ratio of 30 compressions to two breaths. Once an anaesthetist has arrived, they should secure a definitive airway with an endotracheal tube. At this point, continuous chest compressions should be performed to a depth of 5–6 cm (at a rate of 100–120 per minute), with simultaneous ventilations (at a rate of approximately 12 per minute).

The defibrillator should be attached to the patient as soon as possible and, if required, a shock given. The team should be aware of their own safety when using the defibrillator. In this scenario there is no shockable rhythm; the patient has pulseless electrical activity (PEA) and therefore defibrillation is not required. (The local anaesthetic toxicity scenario presented in Section 7b contains a shockable rhythm requiring defibrillation.)
Improved perinatal outcomes

- 50% reduction in low Apgar scores & HIE  
  Draycott et al BJOG 2006

- 45% reduction in school age CP (dyskinetic & quadriplegic)  
  Odd et al submitted Arch Dis Child 2015

- 100% reduction in BPI after shoulder dystocia  
  Crofts et al BJOG 2015
NBT Apgar <7 at 5 mins

- Average rate in SW 1.1%
- NBT varied from 0.24% to 0.59% - Not statistically different over time
- Median – 0.41%
Labour ward training: Kansas

• Kansas University Medical Centre
  – Started training in 2008
  – Mandated for obstetric doctors and L&D nurses

• Significant improvements up to 2014:
  – Reduction in CS rate: 31% to 22%
  – 55% reduction in HIE
  – Reduction in BPI post SD: 10.7% to 0%
  – Significant improvement in nurse perception of interaction with doctors on labour ward

Weiner et al AmJOG 2014
Labour ward training: Zimbabwe

• Prompt team went to Zimbabwe in 2011
• 87% of staff had never received any training before
• All maternity staff trained by March 2013
• 34% reduction in maternal death rates

Accepted Bulletin of WHO 2015
Elements of effective training

• Training conducted in-house
• High fidelity simulation
• 100% of maternity staff trained regularly
• Training all maternity staff together
• Teamwork training integrated with clinical training
• Self-directed infrastructural change
• Institution-level incentives to train

Siassakos et al BJOG 2009
Impact of Training

• 23 studies
• Training can save lives
• Mandatory in-house training for all staff
• Future challenges
  – sustainability
  – scaling up training

Bergh et al Best Prac & Res Clin O&G 2015
10 key steps to implementing effective local training

• Over 15 years of experience of multi-professional local obstetric emergencies training
1: Multi-professional

All units should maintain or initiate on-going multi-disciplinary team training for their maternity staff

MBRRACE UK – Saving Lives, Improving Mothers’ Care. 2014

• Multi-professional participants, trainers and drills
2: Locally run training

Training in your own unit, using your own facilities & training **ALL** of your maternity staff:

- Learn how to use own equipment and where to find it
- Majority of staff will have been trained to know what to do in real emergency
3: Drills in the clinical area

Run drills in clinical areas, labour ward, birth suite, obstetric theatres, whenever possible........
4: Integrated teamwork training

• Training in multi-professional teams improves teamworking
  
  Siassakos et al. The active components of effective training in obstetric emergencies. BJOG 2009

• MBRRACE 2014:
  – Communication – junior staff not informing seniors
  – Situational awareness – delays in recognising severity of problems

• More efficient teams state the problem early
  
  Siassakos et al. Clinical efficiency in a simulated emergency and relationship to team behaviours. BJOG 2011
# Teamwork checklists

## Eclampsia teamwork checklist

<table>
<thead>
<tr>
<th>Communication</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instructions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearly worded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoided unnecessary chatter</td>
<td></td>
<td></td>
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<tr>
<td>Plans were shared</td>
<td></td>
<td></td>
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<tr>
<td>Goals were identified</td>
<td></td>
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<tr>
<td><strong>Addressed</strong></td>
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<td></td>
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<tr>
<td>Specific instructions were given directly to the appropriate person</td>
<td></td>
<td></td>
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<tr>
<td><strong>Sent</strong></td>
<td></td>
<td></td>
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<tr>
<td>Communication was not rushed</td>
<td></td>
<td></td>
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<tr>
<td>It was clear what had to be done</td>
<td></td>
<td></td>
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<tr>
<td><strong>Heard</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acknowledgements were made</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requests for repeat information were made</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Understood</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The information was repeated by the recipient</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Postpartum haemorrhage teamwork checklist

<table>
<thead>
<tr>
<th>Situational awareness: ‘the bigger picture’</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Notice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There was an awareness of what each person was doing</td>
<td></td>
<td></td>
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<tr>
<td>There was an awareness of the resources that were needed</td>
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<tr>
<td>Mistakes were identified</td>
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<tr>
<td><strong>Understand</strong></td>
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<tr>
<td>There were regular updates</td>
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<tr>
<td>Problems were identified</td>
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<tr>
<td>A re-evaluation was undertaken</td>
<td></td>
<td></td>
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<tr>
<td>People were asked what they thought</td>
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<td></td>
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<tr>
<td>People were asked to come up with solutions</td>
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<td></td>
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<tr>
<td>There was a discussion of possible solutions</td>
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<td></td>
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<tr>
<td>A clear plan was made</td>
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<tr>
<td><strong>Prioritise</strong></td>
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<td></td>
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<tr>
<td>Key tasks were given priority</td>
<td></td>
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<tr>
<td><strong>Delegate</strong></td>
<td></td>
<td></td>
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<tr>
<td>Each person had a specific task</td>
<td></td>
<td></td>
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<tr>
<td>The tasks were delegated appropriately</td>
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</tr>
</tbody>
</table>
5: Locally adopted and adapted

• Training needs to be adopted & supported by local maternity clinical and managerial leads:
  • Commitment to release all staff to attend
  • Enough faculty to run the training

• Use NICE/National/international guidance but adapt for easier & successful local use
6: In-house clinical ‘champions’

• Identify key clinical staff (doctors and midwives) who can support local training days and encourage others to attend

• Recruit faculty from all groups:
  shop floor staff
  practice development midwives
  research staff
  obstetric and anaesthetic leads
  resuscitation officers etc.
7: Use of simple props and patient actors

• Usual equipment or training equivalents, home-made props

• Include everyone as patient actors...
  – Student midwives, student doctors, HCAs/MCAs
  – May find patient actor role less worrying
  – Brings them into the training
Drill props
Patient Actors
8: Develop tools to aid practice

• Make the right way the easy way
• Treatment algorithms, charts & proformas
• Emergency boxes
Emergency boxes
Tools: Algorithms & proformas
9: Test the tools

- Embed new local guidelines
- Use emergency boxes
- Receive feedback from staff
- More likely to be successfully implemented

.......But no testing of staff on the day
10: Evaluating local clinical outcomes

• Enjoying the training is a good place to start....but shouldn’t be where evaluation ends
• Monitor key quality indicators that can be improved with best practice
  Apgar at <7 at 5 minutes
• Simple dashboard system – red, amber, green
• Published and visible for ALL staff to see
Why training works at Southmead

Sapphire team initial observations

• Training day is a ‘place of safety’
  – immediate feedback
  – Opportunity for system based dialogue
  – Experiential learning
  – Language and behaviours are levelers
  – Handle challenges with respect

• Standardisation & access to algorithms
  – Singing from same hymn sheet

• Pride in work
  – Endowment
Conclusions

Labour ward team training:

• Has been associated with improved safety
  - Local multiprofessional training for all staff
  - Combine clinical and teamwork training
  - Enthusiastic local champions
  - Outcome measurement visible to all

• Training is not the complete answer

• Cultural change is needed
Team training for rare emergencies

Thank you

The class abruptly stopped practicing. Here was a chance to not only employ their skills, but also to save the entire town.